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RAILROAD EQUIPMENT OBLIGATIONS

At the present time railroad extension and improvement is more a financial than a technical problem. The high operating efficiency of the best of our railroads is one of the most notable achievements of American industry and the low efficiency of the worst of our railroads is due to lack of money rather than to lack of able men or the proper equipment. A railroad, by its very nature, must be continuously expanded and improved, otherwise it cannot keep pace with the social and economic demands put upon it. This cannot be done from earnings alone—except the carriers be allowed to charge excessive rates—so that railroads must come into the market continually for new capital. Then they must compete with other kinds of enterprises for a portion of the available savings fund, and they can succeed in this competition only if fortified by a good credit. In consequence of this continual need for new money the carriers have tried one device after another to reach the investing public with a kind of security, the issue of which shall not be hampered by previous promises and limitations, and which may command a ready and dependable market in competition with other forms of corporate securities. One of these devices is the equipment mortgage obligation—usually called equipment obligation.

Broadly speaking, an equipment obligation is a loan of money based on a direct lien on a specific lot of rolling stock. But, as a class, such obligations cannot be defined precisely because of the varying conditions usually required to render this lien direct and explicit, together with the cumbersome restrictions necessary to maintain a reasonable equity behind a lien on heterogeneous property forever in motion and susceptible to rapid depreciation. Equipment obligations are peculiar in form, in security, and in economic position. They may be bonds similar to other railroad bonds, they may be certificates of participation in a contract to purchase and hold a specific lot of rolling stock, or they may be shares in a permanent association. They are secured by tangible property, yet a kind of property which is movable from place to place and declines in value more rapidly than any other used as a basis of corporate obligations. They rest on the general credit of the corporation using the equipment, yet this general credit has little to do with determining their investment position, which is as a whole stronger than that of any other form of corporate

security. Their legal status has never been fully determined by the courts, yet their legality has never been seriously questioned and they have been given priority over first mortgage bonds in the ultimate test of relative strength. With all these contradictions, it is clear that only the most general statements can be rigidly applied to the group as a whole, and that innumerable exceptions and modifications crop out as attempts are made to draw definite and straight lines of demarcation. It is clear, too, that equipment obligations constitute an extremely complex, but fascinating group of corporate securities.

The first recorded instance of anything like the modern form of equipment obligation was in 1845. The Schuylkill Navigation Company contracted for the purchase of barges to be partly paid for from borrowings. The construction of the barges was to be under the control of the board of managers of the company but "the ownership was to be vested in three trustees, to be held as security for the payment of the loan."¹ After the board of managers had built the barges, they transferred them to the trustees who, in turn, leased them back to the navigation company.²

The modern form of car trust association is to be traced to the Railroad Car Trust of Philadelphia created in 1868 for the purpose of furnishing equipment to the Lehigh Coal and Navigation Company. The idea arose, according to Rawle, in the mind of the president of the road, but the legal details, extremely perplexing in their bearing, were worked out by one Charles Gibbons, a Philadelphia attorney.³ Presumably their origin is to be at-

¹ F. Rawle in *American Bar Association Report*, vol. VIII (1885), p. 322.

² This case seems to have been sporadic although almost identical in form with the issue of equipment obligations at the present time under the so-called Philadelphia plan. In this Schuylkill Navigation case, cars as well as barges were afterward included and the trustees issued bonds bearing interest and payable in ten annual instalments. The plan was subsequently modified to permit the trustees to sell the equipment and redeem the bonds with the proceeds. For description of early forms see F. Rawle, *American Bar Association Report*, vol. VIII (1885), p. 277.

³ In February, 1896, Mr. Oliver Adams, writing to the *Commercial and Financial Chronicle* (vol. LXII, p. 259) regarding the death of his father, William Adams, which occurred in England on January 31, 1896, said, "In 1873 he, in conjunction with myself, inaugurated the system of equipping railways in the United States with rolling stock on what is now known as the car trust plan." Although Mr. Adams did much to further the idea he cannot be considered the first in the field. Cited also *Com. & Fin. Chron.*, vol. LXXXI, p. 1760.

tributed to the efforts of this lawyer to surmount a legal obstacle. The Pennsylvania courts would not allow that a "conditional sale" of the moving equipment by the trustee to the road should serve as the basis of an obligation as against a third party.⁴ That is, the trustee could not hold unquestioned title to the equipment, even though the title remained in his name, if he sold it to the road on the usual instalment plan.⁵ Accordingly he adopted the legal subterfuge of holding absolute ownership of the equipment until it had been entirely paid for by the road. Such a legal subterfuge has proved sound, provided it involves no intentional deceit nor injustice. As advanced by the Supreme Court, long ago in one of its few adverse decisions: "Contracts by which railways, insufficiently equipped with rolling stock of their own, lease or purchase, under the form of a conditional sale, such equipment from manufacturers are not of uncommon occurrence, and when entered into *bona fide*⁶ for the benefit of the road have been universally respected by the courts."

⁴ Early case, *Lehigh, etc. v. Field*, 8 Watts and Sergeant 232.

⁵ Pennsylvania is probably the only state which does not permit the "conditional sale" to form a proper basis for security of a lien on equipment. Although this anomaly has proved very annoying to the railroads and their attorneys, the circumventions adopted by lawyers to avoid it have given rise to the strongest known form of equipment obligation. This will be described in detail presently as the so-called Philadelphia plan.

⁶ It is very important that the equipment trust be *bona fide*. Important decisions adverse to equipment obligations have brought out the fundamental principles that there shall be no direct or constructive fraud attendant upon their issue. The entire proceeding must be clear and nothing must occur to give rise to the implication that some creditors are in danger of being defrauded. Under no circumstances must directors of railroads become parties in such manner that they may profit individually. See *Drury v. Cross*, 74 U. S. 7 Wall. 299; *Twin Lick Oil Co. v. Marbury*, 91 U. S. 587; *Wardell v. U. P. Rd. Co.*, 103 U. S. 651. One of the most interesting of the adverse cases showing constructive fraud in a variety of lights is *McGourkey v. T. and O. C. Ry.*, 146 U. S. 536. It actually shows the strength of the equipment obligations issued under the form of the Philadelphia plan because it involved the admission, by every member of the Supreme Court, that such obligations, when issued *bona fide*, were legal. Furthermore, although the entire evidence showed that the form of the lease was resorted to in this case merely as a legal subterfuge to cover up actual fraud—never has there been a clearer case of attempted fraud—the Chief Justice of the Supreme Court and one other dissented on the ground that even constructive fraud did not invalidate the priority of the equipment trust lien in favor of a third party.

⁷ *McGourkey v. T. and O. C. Ry.*, 146 U. S. 551 (1892). A careful summary of the court decisions and legal opinions down to 1885, when the fundamental

Although conceived in the beginning as a means of enabling new⁸ or impoverished roads to acquire equipment when their own borrowing capacity was small, equipment obligations are now used by the strongest roads in the country as a means of borrowing to better advantage than through the issue of general mortgage bonds. The growth of their use was slow at first because associated with emergency financing. By 1890 the total outstanding volume of equipment obligations was less than \$50,000,000 while in 1899 the amount had declined to approximately \$42,000,000.⁹ Due largely to the use of the equipment loans by the strongest roads in the country the total of such obligations rose with great rapidity from 1902 to 1905—from less than \$90,000,000 to approximately \$200,000,000.¹⁰ Since then the practice of financing separately the purchase of equipment has become so common that at the beginning of 1915 the United States and Canadian roads had outstanding over half a billion dollars of equipment obligations,¹¹

attitude of the courts was being shaped is given by Rawle, *op. cit.*, p. 277. The legal phrases were carried down to 1894 in *Car Trusts in the United States*, by Gherardi Davis and G. Morgan Browne, Jr. For important decisions note particularly *U. S. v. N. O. Rd.* 79 U. S. 12 Wall 362; *Fosdick v. Schall*, 99 U. S. 235; *Meyer v. Western Car Co.*, 102 U. S. 1. These cases have, apparently, established the fundamental law of equipment obligations. Their strength, from the legal point of view, is shown by the fact that there are few if any important recent Supreme Court decisions dealing with the legal status of this form of security. Although a multitude of railroad failures have involved the adjustment of equipment obligation claims, the law upholding their strength has been so firmly established that it has not been thought worth while to carry to the court of last resort a point of possible difference.

⁸ Stated directly as late as 1894 by Davis and Browne, *op. cit.*, as the chief reason: "Inasmuch as a very large number of railroads are not, at the time of their organization, in a condition to purchase a sufficient amount of rolling stock outright, and as, at the same time, manufacturers and owners of rolling stock would often hesitate to accept the obligation of a railroad of perhaps doubtful future, even when secured by collateral, in payment for cars and engines, some other security or means of protecting the manufacturer became necessary."

⁹ In 1890, \$49,478,215 and in 1899, \$42,058,348. These figures are those of the I. C. C. adjusted by the editor of the *Commercial and Financial Chronicle* (vol. LXXXI, p. 1760). They include the Canadian Pacific but not the other Canadian roads. The equipment obligations of the Canadian Pacific alone amounted to approximately \$2,000,000 for both years.

¹⁰ *Com. & Fin. Chron.*, vol. LXXXI, p. 1760. Same basis of computation as described in preceding note.

¹¹ Coggeshall and Hicks, New York bankers, computed with great care the outstanding equipment obligations as of Dec. 2, 1914, as \$519,000,000. Freeman and Co., New York, have also published a detailed manual giving the outstanding trusts, as of Jan. 2, 1917.

an amount over twelve times as great as that of 1899.¹² The practice, having been firmly established among steam railroads, has now been extended to other carriers—particularly electric railroads. It should be said, however, that there is still a general prejudice against the use of equipment loans by electric roads and their use is even now an indication of poor credit.¹³

There are various reasons that have led railroads to use equipment obligations, but two are of especial importance—economy and the avoidance of the “after acquired property clause.” Subordinate reasons call for little comment as the present rapid increase of equipment loans never would have occurred had the railroads not found it possible to borrow cheaper in this way than by the issue of junior securities.

Most railroads long ago have mortgaged, to the full, their main lines, so that the only available basis of credit remaining is an inferior lien. The securities based on this inferior lien would naturally command a low market price—another way of stating the fact that the new money obtained from the sale of these junior securities would cost the road a high rate of interest. When at first the issue of equipment obligations was looked upon as a sign of weakness investors avoided them as an inferior makeshift security. The rates paid by the carriers were, therefore, no lower than what would be paid on the junior securities.¹⁴ But gradually banks and investors realized that equipment obligations constituted a special

¹² The following table shows the growth in the amount of outstanding equipment obligations, among some of the stronger roads. (Even thousands.)

	1900	1905	1915
Pennsylvania	\$11,572,000	\$40,000,000	\$40,130,000
New York Central	0	2,462,000	51,802,000
Southern Railway	2,430,000	13,470,000	17,134,000
Norfolk & Western	1,154,000	6,800,000	12,500,000
A few strong roads have discontinued the practice.			
Union Pacific	2,257,000	0	0
Northern Pacific	3,000,000	140,000	0
Atchison	481,000	400,000	0
With one road the amount seemed to vary with its credit.			
Missouri Pacific (including Iron Mountain)	1,043,000	12,970,000	7,397,000

¹³ Such instances are the three issues by the Hudson & Manhattan Railroad and the recent (Sept., 1916) one by the Connecticut Company.

¹⁴ The early equipment obligations were issued almost exclusively to give new or impoverished roads equipment, and the low credit of the road was carried over to the equipment obligations. All issued before 1885 bore high rates of interest. For illustration, the Ohio Central Car Trust created in 1880 bore 8 per cent interest. Rates as high were by no means uncommon prior to 1885.

class by themselves to which the ordinary canons of railroad credit did not apply. The strength given them by the early court decisions has, too, so increased the demand for them that the rates at which equipment issues are taken by the public now compare favorably with those of any other single class of corporate securities.

This low rate of yield for equipment issues is shown empirically by comparing their average yields with that of the senior and junior issues of the same road.¹⁵ To accomplish this comparison, the average yield of all equipment issues of a single road, that commanded a general market, was computed.¹⁶ This average is the entry in the first column. (P. 360.) The yield for the senior bond issues of the same roads was computed by averaging the yields on all the first mortgage, main-line bonds. In some cases not more than one or two issues could be used, but as these command a wide general market they indicate clearly the position of the road's fundamental

¹⁵ In the actual computation I made a more or less random selection of six roads typical of each of four grades of railroad credit: Class A, roads of very strong credit; Class B, roads of medium credit; Class C, roads of poor credit; and finally Class D, roads in the hands of receivers. The spring of 1916 was selected as, on the whole, the best time to use as the basis of the calculation, and March 16, 1916, was chosen arbitrarily as the day to use as the basis for bond prices. The reasons for selecting this time were as follows: Some recent date should be chosen, or else one considerably antedating the European war, in order to minimize the influence of international factors on railroad credit. During the spring of 1916 many roads were in the hands of receivers, but these same roads were enjoying some degree of prosperity, so that their credit was not regarded as hopeless. Subsequent to the spring of 1916 plans for the reorganization of several of these roads had been published so that the market values of their various securities depended more on the treatment at the hands of reorganization committees and only incidentally upon their fundamental credit position. Furthermore since the middle of 1916 there have been on the one hand so many short-time foreign loans that the attention of banks has been directed away from all domestic short-time securities and, on the other hand, a plethora of gold has very much befogged the judgment of bankers regarding their security investments. Banks are large customers of railroad equipment obligations. On the whole, therefore, economic and monetary conditions seem to make the spring of 1916 a better time to select for a comparison of railroad credits than any time since.

¹⁶ Although these issues are not regularly quoted in the exchanges this computation was relatively simple. Three investment houses in New York make a specialty of these issues. From one or all of these it is possible to obtain a "bid" on practically every equipment issue and a firm "offer" of a great many issues. Furthermore half a dozen brokers are more or less specialists in "equipments" and their "subject offers" afford a close market. No distinction was made between "Philadelphia plan" certificates and equipment bonds,

credit. The junior or general credit of the road was computed in the same manner from the average yield on the refunding and the general mortgage bonds¹⁷ and the debentures—if any—but without reference to the guaranteed issues.¹⁸

Summarizing these results, therefore, it appears that the average investment yield for solvent roads was 4.31 per cent for the equipments, 4.61 per cent for the senior mortgage bonds, and 5.29 per cent for the junior or general credit bonds. The economy of borrowing through equipment obligations is apparent. It is also apparent that the equipment obligations of insolvent roads maintained a credit hardly second to that of their underlying first mortgage bonds. This conclusion is in accordance with the actual practice of railroad administration. A road which cannot sell bonds can always sell equipment obligations and that at rates which make the borrowing in no sense a burden. Even when refunding and debenture bonds can be sold easily it is ordinarily more economical for the management to issue equipment obligations, to cover such expenditures as must be made for new rolling stock.¹⁹

The second advantage concerns the "after acquired property clause." Bridges, terminals, and branch lines are frequently built by subordinate corporations so that the new property may not pass, automatically, under some old mortgage which contains a clause to the effect that all property subsequently owned by the road becomes subject to it. In the same way, the trustee of an

¹⁷ In several cases first mortgage bonds on unimportant branch lines were considered as general credit obligations. Convertible issues of all kinds were omitted.

¹⁸ The practice of some statisticians of using the guaranteed issues of a road as a basis of computing its general credit is misleading. Besides the anomalous character of a guarantee—as shown by the Western Pacific case on the one hand, and the Ozark and Cherokee Central case on the other—the value of a guaranteed bond rests, in the minds of investors, much more on the value of the property than on the guarantee. Take the Southern Pacific, for example, a system prolific in guarantees. Its general credit, based on the San Antonio and Aransas Pass 1st 4s would be 7½ per cent on the Houston and Texas Central 1st 5s, 4½ per cent—both guaranteed branch line roads. The guaranteed and the unguaranteed Houston East and West Texas 1st 5s sell on exactly the same basis.

¹⁹ It stands to reason that money cannot be borrowed on equipment and used for other purposes. In the old Ohio Central case (146 U. S. 536), one of the few instances of the abuse of equipment obligations, over a quarter of the total money borrowed on the equipment was used to purchase a coal property and to pay off previous indebtedness of the road.

equipment obligation, retaining title to the rolling stock holds it back from the lien of any such prior mortgage,²⁰ and makes it

	Average yield of equipment obligations	Average yield of premier securities	Average yield of general credit securities
<i>Class A. Roads of very strong credit.</i>			
Pennsylvania	4.05	4.042	4.354
Chicago & Northwestern	4.10	4.242	4.507
Norfolk & Western	4.10	4.197	4.54
Atlantic Coast Line	4.12	4.323	4.87
Delaware & Hudson	4.15	4.08	4.41
New York Central	4.30	4.246	4.698
Average	4.137	4.188	4.536
<i>Class B. Roads of medium credit.</i>			
Southern Pacific	4.15	4.575	4.966
Baltimore & Ohio	4.17	4.516	4.865
Central of Georgia	4.25	4.52	4.96
New York, New Haven & Hartford	4.30	4.40	5.392
Hocking Valley	4.30	4.72	4.87
C. C. C. and St. Louis	4.35	4.95	5.35
Average	4.253	4.613	5.067
<i>Class C. Roads of poor credit.</i>			
Chesapeake & Ohio	4.30	4.60	5.18
Southern Railway	4.35	4.923	6.04
New York, Ontario & Western	4.40	4.95	5.45
Seaboard Air Line	4.40	4.987	6.10
St. Louis Southwestern	4.90	5.10	7.40
Chicago & Alton	4.90	5.70	7.50
Average	4.54	5.04	6.28
Average for solvent roads	4.310	4.614	5.294
<i>Class D. Roads in hands of receivers.</i>			
Chicago, Rock Island & Pacific	5.05	4.97*	†
Missouri, Kansas & Texas	5.30	5.40	
St. Louis & San Francisco	5.35	4.95	
Missouri Pacific	5.40	4.70	
International & Great Northern	5.70	6.75	
Pere Marquette	6.00	8.20	
Average	5.47	5.83	

*The yields computed for the premier securities of roads in the hands of receivers are not as reliable as the previous calculations, because based only on one or two separate securities. These are, however, the old underlying first mortgage bonds on the main line trunk stem. Such securities have their values but little affected by the receivership of the whole system.

†The general credit securities were in default and no computation of investment yield is possible. They were quoted all the way from 44 per cent of par for the debentures of the Rock Island road down to 6 per cent of par for the debentures of the Pere Marquette.

²⁰ Leading early case *United States v. N. O. Railroad*, 79 U. S. 12 Wall. 362.

possible to use the rolling stock as the basis of its own purchase money loans.

In addition to these two main reasons there are, as has been said, others which sometimes influence the issue of equipment obligations. The tax laws of a state may subject bonds to a personal property tax, while the equipment certificates, being certificates of part ownership in physical property, escape. Again the bankers of the road may believe there is a better demand for the road's obligations with banks than with private investors, and equipment obligations are especially favored by banks. Still again the car and locomotive manufacturers are often willing to accept an equipment obligation in part or for nearly the whole payment of railway purchases on cheaper terms than the railroad can obtain by selling its own bonds and using the proceeds to reimburse the manufacturers. This is especially true at a time of slack business activity combined with high interest rates.

In substance, all equipment obligations are direct liens on rolling stock, but as now issued they may be divided into two great classes—those issued under the Philadelphia plan of a lease and those issued under a direct mortgage, sometimes, without reason, called the New York plan. As the Philadelphia plan is at once the most individual and the most complex, giving rise to the strongest kind of railroad obligation, it will be described first in considerable detail.

The Philadelphia plan²¹ of issuing equipment obligations, as it has now been crystalized into more or less regular practice, consists of a device whereby the railroad makes an initial payment towards the purchase of a definite number of cars or locomotives, but does not acquire the title to the property until it has met the unpaid

²¹ Certain specific reasons explain the association of equipment obligations with Philadelphia and Pennsylvania. (1) They originated among Pennsylvania corporations. (2) The conditional sale is not a legal basis for a direct equipment obligation. (3) Car trust certificates, although having mortgage bond security, yet as certificates of part ownership in physical property, have been considered non-taxable when held by Pennsylvania holders. (The best legal opinion now is that this question has never been finally adjudicated.) (4) The location in Pennsylvania of large equipment companies. (5) The example of the Pennsylvania Railroad, although this reason has been effective only a short time.

balances.²² The road uses the equipment under a lease but never obtains even conditional ownership until it has paid the entire purchase price. The procedure is made clear by observing the steps of a typical case. A railroad desires to acquire some new cars. It enters into a contract with the manufacturer, who builds the cars according to the specifications of the road. When the equipment is ready for delivery, the road then enters into an elaborate agreement with some individual, a trust company, or association created for the purpose, under which the latter shall acquire and pay for the equipment nearing completion and lease it to the road.²³ The individual, trust company or association becomes the actual and legal owner of the equipment, not merely the trustee. About one tenth of the necessary money is supplied by the road and the other nine tenths is obtained from bankers and ultimately from investors through the sale of participation certificates based on the security of the equipment itself and the pledge of the lease. This lease involves at least five provisions.²⁴ First the railroad or lessee promises to pay the owners or lessors each year an amount of money necessary to meet all the interest on the notes or participation certificates then outstanding together with a certain instalment on the unpaid portion of the entire issue. Secondly, the railroad promises to keep the equipment repaired and insured, and also to replace any cars burnt or destroyed. Thirdly, the railroad promises to put a name plate on each car describing it as the property of the owner or lessor and to use no lettering so as to imply that the road is itself the actual and legal owner of the rolling stock. Fourthly, the road promises that, in case it fails to meet any part of its obligation,

²² The best and clearest account of the course of the procedure is, in the opinion of the present writer, an editorial in the *Commercial and Financial Chronicle*, vol. LXXXII (1906), p. 839.

²³ In very rare cases there is no trustee, the manufacturing company leasing the equipment directly to the road—as in St. Louis and San Francisco R. R. Series M (1907) the Pullman Company leased the cars directly to the road.

²⁴ The Committee on Railroad Bonds and Equipment Trusts of the Investment Bankers Association found that trustees had been negligent in insisting that the provisions of the lease be fully lived up to. The committee suggested certain reforms. Chamberlain gives an outline of these in a recent popular article. He also summarizes certain clauses that should be present in an equipment trust agreement. *Moody's Magazine*, vol. XVIII, p. 135. The suggestions on the part of the committee are excellent, but its effects are likely to be frustrated by one difficulty—Who shall pay the trustee for continuously checking up its trust?

especially if it fails in its payments, it will assemble at one point the entire equipment covered by the lease and deliver it over to the lessor or owner. Lastly, the lessor agrees that on the payment of the last instalment it will execute a bill of sale to the road conveying to it the title of the rolling stock. From this description it is clear that the whole purpose of the agreement is to avoid giving the railroad even a semblance of a title to the equipment while it is using it but at the same time provide an arrangement which shall enable the road to pay gradually for it and ultimately to own it. The security is never the credit of the road but the merchantable value of the rolling stock itself; yet the road has the full and free use of the rolling stock while it is paying for it as if it were its own.

When equipment obligations are not issued under the Philadelphia plan the railroad acquires the rolling stock and then deeds it in trust to a trustee as in any other mortgage. Or the trustee acquires the equipment directly and delivers it to the road under a conditional sale agreement. Such obligations, being based directly on the credit of the issuing road, with the collateral pledge of the equipment, are called equipment bonds.²⁵ They are an outgrowth

²⁵ Unfortunately the nomenclature on this subject is by no means clear. The railroads and especially the investment bankers have *seemingly* sought to befog the public mind. If issued under the straight Philadelphia plan, the obligation is not that of the railroad (although it may be and is often guaranteed by the road), but merely of the trust estate of the equipment. The trustee may be represented by a private person, a trust company, a car manufacturer, an association, or all these acting together. The point is, the certificate is the right to participate in certain property held under trust, which includes (1) the equipment, (2) the legal instrument or lease under which the owners or trustees look forward to the final sale to the railroad. An equipment bond, on the other hand, is merely the promise of the road to pay the bearer or registered owner a certain sum, a promise resting on the pledge of equipment with a trustee. An "equipment bond" is not issued under the Philadelphia plan, except by the use of a misnomer. There have been and are today many attempts to combine the two ideas, but, on analysis, it will appear that the obligation is reducible to one or the other class. The term "equipment note" is sometimes used, and may refer either to the Philadelphia plan certificates or to the bond. Also various roads have tried to combine the two forms by acquiring the equipment, deeding it to a trustee, and then leasing it. This is an unfortunate subterfuge. Some roads, too, have issued an out and out equipment bond, but have sought to give it the appearance of a Philadelphia plan certificate by bringing in the lease idea. An editorial in the *Commercial and Financial Chronicle* (vol. LXXXII, p. 361) succinctly reviews the confusion in names, and attempts to clarify the essential differences in form. The statement given there is the clearest in print.

of the original Philadelphia car trust certificates²⁶ and represent a distinct emasculation of the strength of the earlier obligations. The road has some kind of a provisional title to the equipment²⁷ whereas in the Philadelphia plan it has not the slightest semblance of a title. Therein lies the strength of the Philadelphia form of obligation.²⁸ Except in legal details the two methods of issue are based on the same idea—a mortgage on equipment to be liquidated by the road through instalment payments.

The issue of equipment obligations seems to be a matter of individual policy among the roads. Before 1892 it could be said with considerable show of evidence that their issue was, with a single exception, confined to weak roads, but since 1900 roads of the strongest credit have resorted to this means of borrowing. Among the strong roads, the Pennsylvania had in 1915 over \$40,000,000 of equipment obligations, and the New York Central over \$50,000,000.²⁹ On the other hand the roads under the management of J. J. Hill had not a single dollar of equipment obligations³⁰ nor had the Delaware, Lackawanna and Western, nor the Union Pacific

²⁶ The extensive issue of straight equipment bonds, without even the form of the Philadelphia plan, is comparatively recent. It is to be traced to the adoption of the use of equipment loans by the roads of strong credit, outside of the Pennsylvania system, and would not go back more than ten or twelve years. It is true that some of the coal roads were using equipment bonds before 1890 but the instances are rare. There were probably no straight equipment bonds prior to 1885.

²⁷ Even then under the conditional sale, except in Pennsylvania and possibly one or two other states, the title is considered to remain with the trustee. One of the latest decisions covering this point states: "The title to the equipment sold under the contracts here involved remained in the vendors until fully paid for. The interest of the railroad companies and their mortgages was but an equitable interest, and subject to the terms of the conditional sale." *Metropolitan Trust Company v. Railroad Equipment Company*, 108 Fed. 918 (1901).

²⁸ An excellent illustration of the difference of strength in the two kinds of issues is afforded by the reorganization of the Norfolk and Western Railroad. There were at the time of the failure two groups of equipment obligations: (1) Equipment mortgage 5 per cent bonds of 1888, \$4,114,000 outstanding. These were not issued under the regular Philadelphia plan. (2) Car trust obligations, various issues and maturities, \$3,125,000 outstanding. These were issued under the Philadelphia plan in its simple form or with certain unimportant modifications. In the reorganization, the equipment bonds were disturbed, the holders receiving new bonds and stock, whereas the car trust obligations were paid in cash, although it required over half the \$5,555,000 of money raised for immediate needs. Plan given in *Com. & Fin. Chron.*, vol. LXII, p. 641.

²⁹ See note 12.

³⁰ Except about \$1,400,000 of the Colorado and Southern.

railroads. Among the roads of weak credit the St. Louis and San Francisco was overloaded with equipment liens, whereas the Western Pacific and the Boston and Maine, weak roads in opposite parts of the country, had no equipment obligations. Nor can there be any sectional generalizations, although the far-western roads as a class show the least inclination to issue such obligations and the coal roads in eastern trunk line territory perhaps the most. Yet, when all is said, the question is reduced to the specific financial policy of individual roads.

The physical equipment itself that is covered by the lien is usually diversified.³¹ It covers in the great majority of cases, both locomotives and cars.³² When issued to cover a single class of equipment this class is usually of the standard form used in large

³¹ Of the 320 separate equipment issues of American Railroads existing at the beginning of 1915 only 78 or 24 per cent were mortgages on one kind of equipment alone, the remaining 242 issues or 76 per cent covered more than one kind. In making this and some of the later statistical computation the writer has made liberal use of the very valuable publication of the Guaranty Trust Company of New York entitled *Railway Equipment Obligations*.

³² The following are two typical equipment trusts. They have been selected at random merely by way of illustration.

Mobile and Ohio R. R. Co. Equipment trust series "F," 4½ per cent interest. Dated March 1, 1912. Due \$23,000 each March 1, and \$22,000 each Sept. 1, 1922. Equipment cost \$500,615. Obligations issued \$450,000.

Security: 4 Pacific locomotives, 2 Mikado locomotives, 6 steel passenger cars, 4 steel underframe mail and baggage cars, 1 steel underframe express car, 334 steel gondola cars, 50 steel underframe automobile box cars.

Louisville and Nashville R. R. Co. Equipment bonds series "A", 5 per cent interest. Dated June 2, 1913. Due \$325,000 to June 1, 1923. Equipment cost \$7,226,420. Obligations issued \$6,500,000.

Security: 20 freight locomotives, 4 Pacific type locomotives, 26 steel underframe passenger cars of three types, 2 steel underframe baggage and mail cars, 8 steel underframe baggage cars, 5 steel postal cars, 3,000 all steel hopper and gondola cars, 39,000 freight and gondola cars of eight types, 80 cabooses.

An extreme case of diversification is represented by Chicago, Rock Island and Pacific Railway Company's equipment 5 per cent notes, series "H." Dated July 1, 1913. Due \$441,000 semi-annually to July 1, 1923. Equipment cost \$5,521,348. Obligations issued \$4,410,000.

Security: 25 Mikado type locomotives, 30 six-wheel switching locomotives, 30 Pacific type locomotives, 2 mountain type locomotives, 1,500 steel underframe box cars, 500 steel gondola cars, 50 caboose cars, 18 steel chair cars, 20 steel coaches, 5 steel three compartment passenger cars, 7 steel smoking cars, 10 steel baggage cars, 8 steel dining cars, 4 steel horse express cars.

quantities by different railroads.³³ The cost of the equipment is usually 10 per cent in excess of the original issue although the stronger roads such as the Pennsylvania³⁴ and the subsidiaries of the New York Central³⁵ have issued notes for the full purchase price of the equipment. In very rare cases an equipment trust has been formed to cover rolling stock already used, so as to give the road money to make repairs.³⁶

It is extremely difficult to form an accurate idea from the outside of the real cost and value of the equipment covered by any issue, unless it is of one standardized pattern.³⁷ The provision in

³³ Steel gondola cars are most frequently used when the issue covers only a single form of equipment. There were in 1916 approximately 21 equipment issues covering these cars alone.

³⁴ Of a total of nine series of equipment issues of the Pennsylvania Railroad outstanding April, 1915, all were originally issued for the full value of the equipment acquired.

³⁵ For example Kanawha and Michigan Railway, Equipment Car Trust of August 15, 1906.

³⁶ The Detroit, Toledo and Ironton Railroad equipment notes of 1914. The issue is explained, of course, by the low credit of the road. This trust was created when \$2,000,000 was borrowed to repair 1763 coal cars. It is unusual in bearing 6 per cent interest and maturing in three years. The borrowing was excessive as new cars could have been bought for less money. This railroad and its predecessor have afforded the case *célèbre* of equipment issues. See note 53.

³⁷ The following table gives a few averages of the cost of standard equipment. The averages are deduced from a random selection of different equipment issued covering a single class of rolling stock; they include practically all of each type outstanding between Nov. 1, 1914, and Feb. 1, 1917.

Kind of equipment	Number of Series	Total number of pieces	Total cost	Cost per unit
Locomotives (not special type)	17	473	\$8,212,443	\$17,362
Steel underframe boxcars	13	30,636	35,067,383	1,112
Steel underframe refrigerator cars	6	3,525	6,285,055	1,782
Steel gondola cars	8	10,500	12,491,946	1,182

It is difficult to check these figures by the actual contracts. A writer in the *Annalist* estimates the average net cost of a standard 40 ton steel underframe box car for the eight years from 1908 to 1916 to be \$947, with extremes from \$844 to \$1,200. The average in the above table of \$1,112 seems to indicate excessive prices paid or else inflation of the costs. Owing, however, to the extreme variation in demand, there is a remarkable difference of cost of the same equipment according to the time of purchase. This subject is ably discussed with statistics in the *Annalist*, vol. VII (Jan. 24, 1916), p. 116.

the lease agreement that is of most real consequence is that dealing with the rapidity with which the total loan is to be paid. Under all circumstances, railroad equipment wears out rapidly and is growing obsolete constantly.³⁸ Were there no means of fully maintaining the equity behind an equipment lien, therefore, it would be the weakest kind of corporate security. But it is the strongest; for by making it obligatory on the part of the road to pay off the obligations faster than the equipment wears out, the equity to the note-holders is not only maintained but increased. To achieve this result, certain definite presumptions must be made, the most important of which is the true rate of depreciation.³⁹ For

³⁸ It is usually contended by railroad engineers that obsolescence is greater with locomotives than with any other form of equipment. While this may be true, it should be remembered that an obsolete locomotive can be used on branch lines and for company work whereas obsolete freight cars are uneconomical however employed. Obsolete passenger cars are even worse because besides being inefficient, they usually tend to create ill feeling in the minds of the patrons of the road.

In the opinion of the present writer that class which suffers least in value through use—both physical depreciation and obsolescence—is the steel underframe tank car for the transportation of petroleum products.

³⁹ The depreciation of rolling stock has been the subject of many elaborate studies. Unfortunately, these have led to no unanimous conclusion. The Master Car Builders Association estimates for cars as follows: wooden bodies and wooden underframes 6 per cent annually; wooden bodies and steel underframes 5½ per cent; metal bodies, steel underframes and trucks 5 per cent. This basis was taken by the statistician of the Guaranty Trust Company in figuring margin of safety for equipment obligations. See *Railway Equipment Obligations* (third edition), p. 9. Chamberlain uses rough estimate of 15 to 20 years as the life of equipment. See *Principles of Bond Investment*, p. 309. The Pennsylvania road has used 3 per cent for freight cars and 4 per cent for locomotives. Rates have varied. See T. R. Lill, *Jour. Account.*, Jan., 1917, p. 1, giving statistics. Now, while it is perfectly true that the development of steel construction, particularly the steel underframe, has very much increased the serviceability of the car it is not clear from records that the salable life of the car is any longer. The investigations of the Master Car Builders Associations and the various studies that have appeared from time to time in the railroad periodicals have assumed the existence of, and have sought to determine a theoretical period of usable life for railroad rolling stock. Such a computation is not sufficient for the equipment bondholder because, from his point of view, the value of rolling stock is not its theoretical usable value, but its salable value. The two criteria are essentially different. A car may have a theoretical life, based on an arbitrary depreciation constant, long after it ceases to have a secondhand sale value. It may be held in reserve for freight congestions when it cannot be sold—except at the very time of the freight congestion. Moreover, the

the purpose of valuing the equity behind the equipment obligations it is necessary to base the calculation on the sale value of second-hand equipment. We may assume that the equipment declined about 85 per cent in value during the first 13½ years, at which time it has a scrap value of about 15 per cent of cost, and that the

constants worked out by the manufacturers are based on mere decline in physical value through use, and presume only an arbitrary and slight, if any, constant of obsolescence. Furthermore, the annual cost of repairs increases as the car ages, so that there comes a time when it is cheaper for a road with credit to "scrap" the cars than to meet the constantly increasing cost of repairs. In fact, after a time, the value of the car becomes a kind of constant scrap value, the use and sale value being functions of the repair charges. From these theoretical considerations and such figures as the writer is able to gather from practical railroad men, he is of the opinion that collections of mixed equipment, such as are cited on a previous page, consisting of ordinary locomotives to about a third of the total cost and the other two thirds standard cars readily usable by other roads, has a salable life of about 13½ years. At the end of this time it has a scrap value of about 15 per cent of its original cost. This scrap value suffers only slight diminution during the next five to ten years, provided sufficient sums are annually spent in repairs to take care of the obvious decays and breakages. For purposes of computation, we may assume, therefore, that the equipment declines 85 per cent in value during the first 13½ years of its life. The decline in salable value appears to be more rapid during the first three years of the equipment's use and less rapid during the last four or five years, than an arithmetically regular decline would imply. The first year, this decline is fully a half more than what the average of the period would be, whereas the decline during the last year is only about a half that of the average. From the fourth to the eighth year, the decline is the average. If these assumptions are approximately correct, we may construct a table showing the percentage of original cost represented by the decline in salable value for each year. It would be something like this:

<i>Per cent</i>			<i>Per cent</i>		
1st year decline	9.5		8th year decline	6.3	
2d " "	8.4		9th " "	6.3	
3d " "	7.4		10th " "	6.3	
4th " "	6.3		11th " "	6.3	
5th " "	6.3		12th " "	5.4	
6th " "	6.3		13th " "	3.2	
7th " "	6.3		14th " "	1.1	
			15th " "	scrap value 15	
				per cent of cost	

It should be remembered that any such computation is inexact and at best a mere guess. It is, however, much more accurate for the purposes of judging the secondhand sale value of equipment, than that of the Master Car Builders Association, which concerns itself merely with usable value based on material depreciation. On the other hand, general economic conditions may entirely upset these estimates. If the equipment is bought just before a general business "boom," it is entirely possible that the subsequent rise in the initial cost prices of equipment and the necessities of the other roads might create a situation such that year-old cars could be sold for more than they cost. It is

decline is most rapid at first. Under such circumstances, the relative equity behind an issue of ten years serial equipment bonds can be shown by a table. The computation assumes that the equipment cost \$1,000,000 of which 10 per cent or \$100,000 was paid before the equipment was received and that 10 per cent of the balance shall be paid the first of each year following.⁴⁰

Beginning of year immediately after instalment paid	Volume of certificates outstanding	Percentage of depreciation of original cost during preceding year	Money value of depreciation during preceding year	Value of equipment	Equity behind outstanding certificates	Percentage of value of equipment represented by outstanding certificates
1	\$900,000	0	0	\$1,000,000	\$100,000	(Per cent)
2	810,000	9.5	\$95,000	905,000	95,000	90
3	720,000	8.4	84,000	821,000	101,000	89
4	630,000	7.4	74,000	747,000	117,000	87
5	540,000	6.3	63,000	684,000	144,000	84
6	450,000	6.3	63,000	621,000	171,000	79
7	360,000	6.3	63,000	558,000	198,000	72
8	270,000	6.3	63,000	495,000	225,000	64
9	180,000	6.3	63,000	432,000	252,000	54
10	90,000	6.3	63,000	369,000	279,000	42
11 directly after payment of last instalment	0					24

Certain inferences may be made from a study of these figures. The most obvious is that the equity behind the outstanding certifi-

quite true that a standard steel underframe box car, bought in January, 1915, could be sold in January, 1916, after a year of reasonable use for more than it had cost; it is even probable that this same car could be sold January, 1917, after two years of use, for what it had cost. Of course just the reverse is true if the equipment is bought at the height of a boom period.

⁴⁰ Similar calculations of the equity behind equipment obligations at varying periods of their life have been made by other writers using slightly different assumptions for the rates of depreciation. Two such calculations have received publicity, in neither of which do the *general* results differ from the computation here given. The Guaranty Trust Company's calculation is based on the Master Car Builders Association's figures for depreciation cited in a previous note. It shows a larger proportionate equity during the first few years of the equipment trust. Chamberlain explains the same principle (*op. cit.*, p. 309) by means of a diagram but is somewhat vague and unscientific in the use of his depreciation constants, though more exact than the computation here given in the use of semi annual rather than annual instalment payments. His diagram shows at a glance, much better than figures, the principle of increasing equity behind the equipment obligations.

cates increases as each instalment is paid in spite of the depreciation of the equipment. In other words, the railroad obligates itself to pay off its certificates more rapidly than the security behind them declines in value. Herein, as was said before, lies the strength of equipment issues. The second inference is that the obligations have least strength, from the point of view of equity, immediately after their issue; and those that mature late have a constantly increasing strength the longer they are outstanding. The strongest equipment obligations obtainable are those of the last instalments of some old series purchased a year or so before its maturity. The figures given in the preceding table show too, that an issue of equipment obligations having more than ten years to run, or one that is paid off in more than ten annual instalments, or is issued for the full value of the equipments does not in itself afford substantial security. It is true that some of the roads with very strong credit issue securities of this sort that are called equipment obligations, but these, in reality, rest much more on the credit of the road than on the equity behind the equipment.⁴¹

⁴¹ All the equipment obligations of the Pennsylvania Railroad are of this class, because issued for an amount equal to the total cost of the equipment. So also are the series A, B, and C of Chicago & Northwestern Railway. The four great equipment trusts of the New York Central lines are of this class because they mature in fifteen rather than ten years. That of 1913 is a conspicuous variation from type in that it is an "open end" mortgage. So also is the single issue of Delaware and Hudson equipment bonds in that it is protected by a sinking fund rather than instalment payments.

The Buffalo, Rochester and Pittsburgh Equipment Trusts (series A, B, C) broke most of the canons in that they were issued for the actual value of the equipment purchased, ran for 20 years, carried a sinking fund of 5 per cent to 6 per cent, which could be invested in other equipment provided the obligations were not purchasable at par.

A practical illustration of the necessity of insisting that the equipment obligations shall be issued in strict conformity to established practice is that of the Wheeling and Lake Erie Railroad 5 per cent equipment bonds, issued in 1902 and payable in instalments of different amounts until 1922. They were therefore irregular in having double the life established by conservative practice. A receiver for the road was appointed in 1908. He continued to meet the sinking fund instalments until January 1, 1915, when he defaulted, and on July 1, 1915, defaulted on the interest. In the spring of 1916, the time at which the previous comparisons were made, the road's underlying first mortgage bonds commanded a 4.92 per cent credit, notwithstanding the receivership. In a previous note it was pointed out that ordinarily the value of equipment obligations is affected but little by receivership. Yet, in this case the certificates yet unpaid declined to only 60 per cent of par, at which price they were selling on a 15 per cent basis—provided one assumed their payment at ma-

It is quite common for the railroad using the equipment to guarantee the car trust certificates covering the equipment it leases. Almost all ordinary equipment bonds issued under the New York plan are guaranteed, although it is questionable whether or not this adds to their fundamental security. When the issue is irregular in some conspicuous respect it is almost always guaranteed by the operating road. Likewise when an equipment trust is created for one or more small subsidiaries it is usually guaranteed by the parent.⁴² In some cases, the notes are guaranteed by the manufacturing company from which the equipment was purchased.⁴³ Frequently the entire issue is subject to redemption by the railroad company,⁴⁴ and sometimes the equipment may be withdrawn from time to time.⁴⁵ Very rarely the equipment security is reinforced by the deposit of bonds with the trustee.⁴⁶

The final test of any security is its position in case of the failure of the enterprise on whose credit it is issued.⁴⁷ Judged by this test, equipment obligations are among the strongest, if not the strongest

turity. Owing to the long period during which the road had been paying for the equipment, the value of the rolling stock had declined to less than the face value of the outstanding certificates; hence the receivers might regard the payment of the certificates as of doubtful expediency. See note 55 for outline of final settlement.

⁴² The four great issues of the New York Central lines are guaranteed principle and interest by the New York Central & Hudson River, the Lake Shore & Michigan Southern, the Michigan Central, the "Big Four," the Pittsburgh & Lake Erie, and the Toledo & Ohio Central railroads.

The Trinity & Brazos Valley Railway, Equipment Trust, Series A, are guaranteed, principle and interest, by two independent corporations, the Rock Island and the Colorado & Southern roads.

⁴³ The equipment notes of the Denver, Northwestern and Pacific Railroad of 1910 are guaranteed by the American Locomotive Company through endorsement on each note; those of the St. Louis and San Francisco Railroad (Series L, 1907) by the American Car and Foundry Company. An extreme case is where an equipment issue of a small road is guaranteed by the interests behind it. (St. Louis, Troy and Eastern, issue of June 1, 1915.)

⁴⁴ Of the three hundred odd issues outstanding January 1, 1917, 56 or about 25 per cent were subject to redemption. The premium varies from 1 per cent to 2½ per cent.

⁴⁵ An old issue of the Michigan Central, of 1906.

⁴⁶ Mexican Central Railway Company equipment and collateral bonds, First and Second Series, are sporadic cases of this. Reading equipment 4½ per cent bonds of 1901, additionally secured by the deposit of \$833,000 Philadelphia and Reading general 4s.

⁴⁷ A clear statement of this in an editorial in the *Commercial and Financial Chronicle*, vol. LXXII, p. 1296.

form of corporate security. When they are issued according to the Philadelphia plan the courts have, almost without exception, considered the insolvent railroad only the lessor of the equipment, which is not therefore, covered by the bonds of the company,⁴⁸ and of which the receiver does not become the trustee. Since the title never rested with the railroad corporation, and the property is movable, the real owner or the lessee has the power to take away the equipment if the railroad violates the contract under which the equipment obligations were issued. Knowing that the railroad cannot be operated without cars and locomotives and that it would be wasteful and inexpedient to sacrifice the equity remaining to the road, receivers have invariably⁴⁹ continued the payments on the equipment trust interest and instalments. If necessary, receivers' certificates, taking priority over mortgage liens, have been authorized to meet these payments. Nevertheless, at the time of reorganization the holders of outstanding equipment obligations have, in a few rare cases, been asked to refund their securities on an advantageous basis;⁵⁰ in still rarer cases they have been asked

⁴⁸ The important case of the Toledo and Ohio Central is no exception to this rule. The certificates in this particular case were not issued under the Philadelphia plan in its unequivocal forms. Some of the equipment was made in the railroad's own shop, some of it was owned first by the railroad, used, and then transferred over to the trustee. So that the United States Supreme Court interpreted the lease as a mere subterfuge to emasculate the lien of the general bondholders of the railroad. This they condemned. See 146 U. S. 536.

⁴⁹ The exceptions of temporary lapse—Denver and Rio Grande; Detroit Southern; Atlanta, Birmingham and Atlantic; Pere Marquette—are so exceptional as not to destroy the strength of the above statement.

⁵⁰ The two cases of the refunding of equipment obligations are the Denver and Rio Grande reorganization of 1886 and the Norfolk and Western reorganization of 1896. The former involved an actual temporary, although not permanent, sacrifice, and will be discussed at length in the succeeding note.

The Norfolk and Western Railroad reorganization of 1896, although involving the refunding of certain equipment obligations did not imply even a temporary sacrifice. There were two classes of equipment obligations outstanding (see note 28); those issued under the Philadelphia plan were paid in money, whereas the equipment mortgage bonds were refunded. For each \$1,000 in equipment mortgage 5 per cent bonds, the bondholder received \$1,000 in new consolidated mortgage 4 per cent bonds and \$480 in new preferred stock. He was compelled to undergo a sacrifice of 1 per cent in yearly income, but this was fully compensated for by the preferred stock bonus. Subsequently, with the success of the rejuvenated Norfolk and Western road, he had an increase in both income and principle.

to undergo what would seem like permanent sacrifices.⁵¹ In contrast, however, to these rare exceptions, it may be said that in prac-

⁵¹ The notable case is that of the Denver and Rio Grande reorganization of 1886. As this is the only instance in the history of American railway finance where the holders of equipment obligations issued under the Philadelphia plan were forced to suffer for a considerable period, the details are significant. The old Denver and Rio Grande had been built in the seventies, one of the numerous far-western lines built long before its construction could be said to be in any way an economic necessity. In the depression of 1883 and 1884 it failed. Disaster also overtook its western extension, the Denver and Rio Grande Western. At the time of the failure there existed a comparatively small issue of first mortgage bonds, the interest on which had been earned unquestionably. There were also approximately \$3,500,000 6 per cent and 7 per cent equipment certificates on which the interest had not been fully earned. Besides this, there were two large issues of junior bonds and much worthless stock practically all owned in England and Holland. Some of the equipment had been used by the Denver and Rio Grande Western in a manner contrary to the spirit of the equipment trust. In the report of Pothonier and Parrish—an interesting example of a foreign report on one of our early, needless roads, built with foreign capital—it was stated: "It will be absolutely necessary to capitalize the rolling stock trusts on fair and equitable terms, or, failing this (the contracts being extinguished by foreclosure), to provide the necessary equipment on the basis of present low prices." (Paragraphs in report quoted *Com. & Fin. Chron.*, vol. XL, p. 181.) The bonds of all issues, together with the stock, were largely held in England and Holland, but the equipment obligations were held mostly in Pennsylvania. Judge Hallett had ordered the payments of the principle of some of the equipment certificates postponed, and the holders had done little to object. Moreover, much of the equipment itself had been allowed to so depreciate as to have little more than scrap value. Some of the bondholders at the time contended that the reorganization committee could then, in the depression of 1885 and 1886, buy better secondhand equipment for less than the par value of the obligations outstanding. At all events the trustees of the car trusts feared being forced to liquidate on the equipment. All these circumstances combined to make the position of the equipment obligations conspicuously weak. It is true that a plan of reorganization was worked out in Philadelphia which involved the refunding of the equipment obligations into first mortgage bonds, but it was not acceptable to the foreign bondholders and its advocates dared not force the foreclosure of the car trusts.

In the reorganization, the small issue of underlying first mortgage bonds was not disturbed. The bondholders reorganization committee first offered the holders of the equipment obligations consolidated (junior) 4 per cent bonds involving a reduction of from 2 per cent to 3 per cent interest, and some preferred stock. Finally, after considerable haggling, they received 17 per cent in cash and 120 per cent in consolidated (junior) 4 per cent bonds for the remaining 83 per cent face value of their equipment certificates. (Total car trusts \$3,476,000, cash payments \$600,000.) The old 6 per cent car trust certificates received in addition 20 per cent in new 5 per cent non-

tically all of the reorganizations of American railroads,⁵² the equipment obligations were either paid in money⁵³ or else assumed directly by the new corporation succeeding to the property of the old one.⁵⁴ In only one instance in the recent history of railroad finance has a reorganization committee forced the holders of equipment obligations to accept a compromise and in this instance the bonds were issued under an unusual and weak agreement,⁵⁵ and in

cumulative preferred stock and the old 7 per cent car trust certificates 30 per cent in the same security.

This reorganization of the Denver and Rio Grande was in 1885 and 1886. The Atlanta, Birmingham and Atlantic, reorganized in 1916, had a similar financial structure—a small, strong, fully secured first mortgage issue, a large volume of equipment obligations and a host of junior bonds, notes and stocks. As in the earlier Denver and Rio Grande case, the first mortgage bonds were undisturbed, but in this later case the equipment obligations were practically all paid in money, although the whole mass of junior securities was obliterated, and even receivers certificates were refunded into income bonds. This difference in the treatment of equipment obligations in analogous situations in 1885 and 1916 indicates the almost impregnable position they now occupy.

⁵² Chamberlain gives a brief summary of some 28 cases of railway reorganization in practically all of which the holders of equipment obligations suffered no hardship (*Principles of Bond Investment*, p. 300). The Guaranty Trust Company also cites a long series of reorganizations in which the equipment obligations were undisturbed (*Railway Equipment Obligations*, p. 11).

⁵³ A suggestive sentence bearing on this occurred in the analysis of various securities of the Missouri Pacific Railway issued by all the reorganization committees at the time of the receivership—"§3,867,000 equipment obligations maturing to June 30, 1918: The equities in the equipment securing these obligations compel provision for their payment in cash." Analysis dated October 15, 1915, p. 3.

⁵⁴ A combination of the methods is shown by the St. Louis and San Francisco reorganization plan. The equipment obligations maturing before July 1, 1917, have been paid in money from assessments on stockholders; sufficient prior lien (senior) bonds are reserved to refund those maturing after July 1, 1917, while in the meantime they are assumed by the new company.

⁵⁵ This was the case of the Wheeling and Lake Erie "equipment sinking fund gold bonds," due 1922, described in note 41. They were unusual in running 20 years and in being liquidated through a sinking fund rather than through instalment payments. After the interest had been in default a year, at the time of the reorganization of the Wheeling and Lake Erie Railroad, the reorganization managers agreed to pay the back interest and to pay 35 per cent of the face of the outstanding certificates in cash and to give new 4 per cent "secured sinking fund equipment notes" for the remaining 65 per cent. These new notes are secured by the old unmatured equipment bonds, which in their turn are secured by the equity in the equipment. The reorganized company agrees to buy and cancel one sixth of the new notes each year until the entire issue is redeemed. Considering the weakness of the conditions under which the

two instances only throughout the varied financial history of our American railroads have the equipment bondholders been compelled to assume possession and resell the actual physical equipment itself.⁵⁶ But even in these instances the holders of equipment obligations suffered no loss, the underlying rolling stock being sold for enough to pay the outstanding certificates. This is a remarkable record for any class of corporate securities. It is even more remarkable, for the protection afforded to the bondholder, than the record of municipal and state bonds.

The strength of equipment obligations is evidence, too, of the importance of "use" value in measuring credit. Reduced to the simplest terms, the reason why railroad receivers and reorganization committees honor the equipment loan above all other forms of permanent debt is that the road cannot operate without its rolling stock and the owners can remove it physically from the possession of the road. Long ago the holders of first mortgage railroad bonds learned that their lien could be emasculated through the willingness of the Court to issue receiver's certificates under the authority of the mandate of public necessity. They cannot remove, physically, their road from the jurisdiction of the Court; they cannot even force the receiver to operate the line were he

original bonds were issued, the reorganization managers were exceedingly liberal to the holders of the outstanding obligations.

⁵⁶ The case is of the Detroit, Toledo and Ironton. The road passed into the hands of receivers and the latter, finding the business inadequate for the total equipment and the equity of the road in a certain car trust relatively slight, decided to allow the holders of the trust to exercise their legal rights and take physical possession of the rolling stock. The trust certificates were practically all owned by two interests which bid in the equipment itself. Aside from interest on interest, the holders of the equipment obligations lost nothing, as the new owners were able to "peddle out" the equipment for more than the face of the certificates remaining outstanding.

The other notable case is that of one of the issues of the Buffalo and Susquehanna Railway. This was a very unfortunate venture which, reorganized as the Wellsville and Buffalo Railroad, proved such a failure that it was closed Nov., 1916, and dismantled. The old Buffalo and Susquehanna Railway had four issues of equipment obligations, A, B, C, D. Three were assumed by an allied company, the Buffalo and Susquehanna Railroad Corporation, which has now (April, 1917), paid all of them except \$30,000 and these will be paid in August. The fourth equipment trust, Series B, was not assumed. After considerable negotiation the equipment covered by it was sold to a syndicate of Buffalo men. This syndicate subsequently sold the equipment, and in order to give a free title, deposited with the trustee a sum equivalent to the unpaid certificates and their interest to maturity.

disinclined. No matter what the road cost, no matter what its replacement value may be, they are helpless to enforce their lien. But the equipment bondholders can strangle the operation of the road by removing the equipment beyond the jurisdiction of the receiver. It is this necessity of its use that makes the rolling stock so substantial a basis for credit.

ARTHUR S. DEWING.